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RANDALL J. KNUTH P.C. 3510-A STELLHORN ROAD FORT WAYNE, IN 46815-4631			WEST, JEFFREY R	
			ART UNIT	PAPER NUMBER
			2857	

DATE MAILED: 06/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/678,183

Applicant(s)

SCHOCH ET AL. 

Examiner

Jeffrey R. West

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 20-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25 and 26 is/are allowed.
- 6) ☒ Claim(s) 1-11, 13 and 20-24 is/are rejected.
- 7) ☒ Claim(s) 12, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 1 and 11 are objected to because of the following informalities:

In claim 1, line 8, to avoid problems of antecedent basis, "determining the speed of the press" should be ---determining a speed of the press---.

In claim 1, line 11, to avoid problems of antecedent basis, "generating the theoretical distance" should be ---generating a theoretical distance---.

In claim 1, line 13, to avoid problems of antecedent basis, "plotting the calculated distance" should be ---plotting the generated distance---.

In claim 11, line 4, to avoid problems of antecedent basis, "determining the first inflection point" should be ---determining a first inflection point---.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 2 and 20-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is considered to be vague and indefinite because it omits essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. As claimed, the method "communicat[es] the speed of the press and values of the press variables to the computational device" and then

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“generat[es] the theoretical distance above bottom dead center for each increment of a slide stroke”. Stated in this way, there is no apparent connection between the communicating step and the generating step. It is suggested that to overcome this rejection, Applicant change “generating the theoretical distance above bottom dead center for each increment of a slide stroke” to ---generating a theoretical distance above bottom dead center for each increment of a slide stroke using said speed of the press and said values of the press variables--- similar to the language of claim 6.

Claim 20 is considered to be vague and indefinite for several reasons.

First, line 6 recites, “a computational device for generating the theoretical slide displacement curve” while there is no previous mention of any “theoretical slide displacement curve.” The previous limitations of claim 20 do not contain any indication of generating any curve and only include limitations for monitoring a running press by sensing a speed value and an input means for inputting a plurality of variables corresponding to characteristics of the press.

Second, lines 10-12 recite, “said computational device communicatively connected to said sensor means and said input means and said storage means.” In the previous limitations, however, there is no limitation or suggestion of any “storage means”. Therefore, it is unclear to one having ordinary skill in the art as to what “said storage means” refers and how this storage means is used in accordance with the other claimed limitations.

Claims 2 and 21-24 are rejected under 35 U.S.C. 112, second

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paragraph, because they incorporate the lack of clarity present in their respective parent claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. Re. 34,559 to Mickowski in view of U.S. Patent No. 4,563,271 to Schroder et al.

Mickowski discloses a diagnostic method for analyzing and monitoring the process parameters in the operation of reciprocating equipment comprising a microprocessor in communication with a non-volatile memory, input device, display, and transducers (column 3, lines 61-68 and Figure 1) wherein the transducers sense and supply velocity data, that can be representative of time increments (column 6, lines 30-31), to the microprocessor (column 4, lines 1-5) as a function of stroke position (i.e. ram/slide displacement above dead bottom center) during a production cycle (column 4, lines 23-33).

Mickowski also discloses inputting the velocity data to the microprocessor (column 7, lines 29-37 and 53-56), storing the data to determine the current displacement profile (column 2, lines 51-55) and plotting, on the display, the

velocity as a function of displacement and a superimposed theoretical profile in order to compare the actual and theoretical curves at any individual point of displacement (column 4, lines 46-50 and 57-66). Mickowski also discloses obtaining, and plotting, the pressure/load data vs. displacement (column 5, lines 55-60) as well as the displacement vs. each increment of time (i.e. count quantity) in a stroke (column 6, lines 26-31 and column 7, lines 11-18).

As noted above, Mickowski teaches many of the features of the claimed invention and while Mickowski does teach comparing the actual curve to a theoretical/ideal "master profile", Mickowski does not include a corresponding means for generating such a profile.

Schroder teaches a method for monitoring a percussion jig having vertical displacement of a slide (column 1, lines 40-44 and column 2, lines 64-68) comprising plotting a theoretical stroke height (i.e. displacement) vs time wherein the theoretical plot is obtained by determining variables effecting the theoretical slide displacement curve and a slide speed inputted to a microprocessor device (column 4, lines 27-43).

It would have been obvious to one having ordinary skill in the art to modify the invention of Mickowski to include the corresponding method for generating a master profile, as taught by Schroder, because Mickowski does indicate that the ideal press profile is defined by specific parameters of the press (column 5, lines 27-32) and Schroder suggests a corresponding method for obtaining the specific ideal profile for the press in order to perform accurate comparisons in the invention of Mickowski (column 4, lines 27-43).

6. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mickowski in view of Schroder and further in view of U.S. Patent No. 5,182,935 to Schockman and U.S. Patent No. 5,099,731 to Eigenmann.

As noted above, the invention of Mickowski and Schroder teach many of the features of the claimed invention, and while the combination does teach generating a theoretical profile based upon the speed of the press and several press variables, the combination does not teach all of the corresponding physical variables that affect the displacement of the press.

Schockman teaches a single reciprocating dynamic balancer for a double action stamping press comprising determining, and plotting, theoretical force (i.e. load) vs. crank angle and slide displacement vs. crank angle (i.e. count quantity) curves based on the speed of the press, the stroke length, connection rod length, and press drive geometry (column 4, lines 5-20 and Figures 1, 2, and 6).

Eigenmann teaches a multi-stroke punch press with a means for correcting the immersion depth and the length of feed comprising determining a theoretical design characteristic curve of the depth of the immersion of the tool vs. the velocity of the strokes and comparing the theoretical curve against the actual curve (column 4, lines 24-40) wherein the no-load (column 3, lines 19-21) characteristic curve is determined using the heights of the bearings as well as a dynamic deflection value (column 3, lines 32-48).

It would have been obvious to one having ordinary skill in the art to modify the invention of Mickowski and Schroder to include all of the corresponding physical variables that affect the displacement of the press, as taught by Schockman and Eigenmann, because Schockman and Eigenmann suggests a method for determining slide displacement curves that takes into account the specifications of a double action press that effect its displacement (Schockman; column 4, lines 5-8 and Eigenmann; column 3, lines 32-48).

7. Claims 5 and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,869,927 to Lose et al. in view of U.S. Patent No. 5,997,778 to Bulgrin.

Lose discloses a geared drag link-slider-crank press, and a corresponding method of use, comprising generating a theoretical slide displacement curve for the press, and plotting this slide displacement vs. crank angle (column 7, lines 27-37 and Figure 3), generating an actual slide displacement curve during load conditions of the press, and plotting this slide displacement vs. crank angle (column 8, lines 21-23 and Figure 4), determining a contact point on the actual slide displacement curve which corresponds to the slide contacting the stock material (i.e. begin work point) (column 1, lines 15-20 and Figure 11), establishing a start point on the slide downstroke between top dead center and the contact point, establishing an end point on the slide upstroke between top dead center and the contact point (i.e. slow points) (column 3, lines 23-31), and identifying and superimposing the points on the

theoretical and actual slide displacement curves corresponding to the start point and the end point (Figures 3 and 4). Lose also discloses that the first plot for displaying the actual slide displacement curve and the second plot for displaying the expected theoretical displacement are for comparing the two graphs to indicate the performance of the press (column 8, lines 21-24). Also, as shown by Figures 4 and 11, the contact point is established as a first determined inflection point on the actual slide displacement curve.

While the invention of Lose discloses many of the features of the claimed invention, including comparing an actual slide displacement curve to a theoretical slide displacement curve, and while it could be assumed that the theoretical/expected slide displacement corresponds to "no load" conditions, Lose does not specifically state that the theoretical/expected slide displacement curve be under "no load" conditions or plotting the displacement sensed by a non-contact displacement sensor vs. time.

Bulgrin teaches an auto-tuned, adaptive process controlled, injection molding machine including a user console for inputting a plurality of set points (column 9, lines 30-37), a non-contact position sensor for sensing the position of the slide (column 9, lines 37-40), a non-contact load sensor for sensing the load of the slide (column 9, lines 53-59), and a screen for displaying a "no load" velocity profile superimposed with a corresponding actual velocity profile and the plurality of setpoints to determine the performance of the press (column 6, lines 24-28, column 9, line 64 to column 10, line 8, column 10, lines 35-53). Bulgrin also teaches displaying the press output as velocity vs.

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displacement (Figure 3A) and displacement vs. time (Figure 8) by relating the two values using a well-known relationship (column 15, lines 15-61).

It would have been obvious to one having ordinary skill in the art to modify the invention of Lose to specify that the theoretical/expected slide displacement curve be under "no load" conditions, as taught by Bulgrin, because, as suggested by Bulgrin, the combination would have allowed the press control system to account for any variation attributed to a specific machine by providing a reference base (column 11, lines 5-16).

Further, it would have been obvious to one having ordinary skill in the art to modify the invention of Lose to include plotting the displacement sensed by a non-contact displacement sensor vs. time, as taught by Bulgrin, because Lose specifically discloses determining variations of the displacement over time periods (Lose, column 7, lines 51-67) and Bulgrin suggest a combination that would have provided a corresponding method for supplying more detailed information to the time changes of interest without interfering with the operation of the press. Also, since Lose teaches that the crank angle in degrees changes over time, plotting displacement over one stroke cycle would display a functionally equivalent relationship as plotting displacement over time.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lose et al. in view of Bulgrin and further in view of Schroder et al. Schockman and Eigenmann

As noted above, the invention of Lose and Bulgrin teaches many of the features of the claimed invention, and while the combination teaches generating a theoretical displacement curve, the combination does not specifically include a corresponding method for generating such a curve.

Schroder teaches a method for monitoring a percussion jig having vertical displacement of a slide (column 1, lines 40-44 and column 2, lines 64-68) comprising plotting a theoretical stroke height (i.e. displacement) vs time wherein the theoretical plot is obtained by determining variables effecting the theoretical slide displacement curve and a slide speed inputted to a microprocessor computational device (column 4, lines 27-43).

It would have been obvious to one having ordinary skill in the art to modify the invention of Lose and Bulgrin to include the corresponding method for generating a theoretical curve, as taught by Schroder, because Schroder suggests a corresponding method for obtaining a the specific theoretical curve for the press in order to perform accurate comparisons in the invention of Lose and Bulgrin (column 4, lines 27-43).

As noted above, the invention of Lose, Bulgrin, and Schroder teaches many of the features of the claimed invention, and while the combination does teach generating a theoretical profile based upon the speed of the press and several press variables, the combination does not teach all of the corresponding physical variables that affect the displacement of the press.

Schockman teaches a single reciprocating dynamic balancer for a double action stamping press comprising determining, and plotting, theoretical force

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(i.e. load) vs. crank angle and slide displacement vs. crank angle (i.e. count quantity) curves based on the speed of the press, the stroke length, connection rod length, and press drive geometry (column 4, lines 5-20 and Figures 1, 2, and 6).

Eigenmann teaches a multi-stroke punch press with a means for correcting the immersion depth and the length of feed comprising determining a theoretical design characteristic curve of the depth of the immersion of the tool vs. the velocity of the strokes and comparing the theoretical curve against the actual curve (column 4, lines 24-40) wherein the no-load (column 3, lines 19-21) characteristic curve is determined using the heights of the bearings as well as a dynamic deflection value (column 3, lines 32-48).

It would have been obvious to one having ordinary skill in the art to modify the invention of Lose, Bulgrin, and Schroder to include all of the corresponding physical variables that affect the displacement of the press, as taught by Schockman and Eigenmann, because Schockman and Eigenmann suggests a method for determining slide displacement curves that takes into account the specifications of a double action press that effect its displacement (Schockman; column 4, lines 5-8 and Eigenmann; column 3, lines 32-48).

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lose et al. in view of Bulgrin and further in view of U.S. Patent No. 5,870,254 to Baserman et al.

As noted above, the invention of Lose and Bulgrin teaches all of the features of the claimed invention except for multiplying a determined value of dynamic deflection by a determined value of static stiffness to determine the load on any point of the slide stroke.

Baserman et al. teaches a transducer suspension system comprising a rotary actuator that moves an assembly to position the transducer elements on a plurality of sliders (column 3, lines 52-55) wherein the load on the slider is calculated, inherently at a computational device such as a controller unit or host system (column 2, lines 60 to column 3, line 11), by determining, and multiplying, values of dynamic deflection of an imaginary axis passing through the center of the slider and of static vertical stiffness (column 5, lines 26-31) to insure balanced conditions (column 5, lines 15-24).

It would have been obvious to one having ordinary skill in the art to modify the invention of Lose and Bulgrin to include multiplying a determined value of dynamic deflection by a determined value of static stiffness to determine the load on any point of the slide stroke because the invention of Lose and Bulgrin does describe the application of bending forces on the press (Lose, column 1, lines 44-53) and balancing the loads imposed across the drive device (Lose, column 14, lines 3-26) and the combination would have provided a method for determining the loads on the device to determine if they are balanced at any point in order to aid the operator in insuring correct press operation using a well known relationship between common press

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parameters (See also U.S. Patent No. Re. 33,783 to Spehrley, Jr. et al., column 2, lines 44-54).

Allowable Subject Matter

10. Claims 12, 14, and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 12 would be considered allowable over the cited prior art because none of the cited prior art teaches or suggests, in combination with the other claimed limitations for monitoring performance parameters for a mechanical press, calculating a distance between the theoretical slide displacement curve and the actual slide displacement curve at a plurality of increments on the slide upstroke between the contact point and the end point, calculating initially the sum of the distances between the theoretical slide displacement curve and the actual slide displacement curve at each increment, shifting the actual slide displacement curve, recalculating the sum of the distances between the theoretical slide displacement curve and the actual slide displacement curve at each increment, and repeating the shifting and recalculating steps until the sum of the distances between the theoretical slide displacement curve and the actual slide displacement curve at each increment reaches a minimum value.

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Claims 14 and 15 would be considered allowable over the cited prior art because while the invention of Baserman does teach determining values of dynamic deflection and static stiffness to determine values of load along the slide stroke of Lose et al. in view of Bulgrin, and while U.S. Patent No. 3,885,283 to Biondetti, teaches a press roll comprising a beam that is straight under no load and bends slightly when loaded wherein the amount of bending is the dynamic deflection value (column 2, lines 44-48), thereby suggesting that it is a difference between load and unloaded conditions that cause the dynamic deflection, none of the cited prior art specifically teaches, suggests, or provides suitable motivation for, in combination with the other claimed limitations for monitoring performance parameters for a mechanical press, calculating values of load along the slide stroke of a press using determined values of dynamic deflection and static stiffness, wherein the value of dynamic deflection is determined by measuring the distance along the ordinate between the theoretical no load slide displacement curve and the actual slide displacement curve.

Claims 25 and 26 are further considered to be allowable over the cited prior art because while many of the cited patents teaches particular limitations of claim 25, there is no reasonable expectation of success in creating such an elaborate combination. Moreover, no cited reference teaches or suggests, in combination with the other claimed limitations for monitoring the load on a mechanical press, a specific "computational device communicatively connected to said speed sensor, said non-contact displacement sensor and

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said input means, said computational device generating a theoretical no load value of slide displacement based upon the speed of the press and the plurality of press variables, said computational device computing a value of dynamic deflection by computing the difference between the theoretical no load value and the corresponding actual load value of slide displacement, said computational device multiplying the value of dynamic deflection by the value of static stiffness of the mechanical press to determine a value of load on the press at a point of the slide stroke.”

Response to Arguments

11. Applicant's arguments with respect to claims 1-15 and 20-26 have been considered but are moot in view of the new ground(s) of rejection. The following arguments, however, are noted below.

Applicant states that “Lose et al illustrates in Fig. 3 a graph comparing the relationship between slide displacement and slide crank rotation of slider-crank mechanisms of the prior art and that expected for the mechanism illustrated in Fig. 1, having a gear ratio of 3:1. Specifically, the solid line graph in Fig. 3 represents the slide movement associated with the prior art slide-crank mechanism, while the broken line graph represents the expected slide displacement pattern for the geared drag link arrangements illustrated in Fig. 1. Fig. 4 is a graph of an actual plot of the position of the slide of a press having a gear drag link-slider crank mechanism of Fig. 1.” Applicant then argues that “[w]hile Lose et al does give a general indication that the actual

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practice corresponds to the expected displacement pattern, there is no specific superimposition of the expected slide displacement pattern of Fig. 3 upon that of the actual plot position of Fig. 4. Accordingly, Lose et al does not indicate or imply establishing and/or labeling specific start and end points on each of the two graphs from Figs. 3 and 4 and, thus, clearly does not disclose or suggest superimposing start and end points from each of the two curves upon one another so that the curves can be compared with one another. Thus, Applicants submit that Lose et al '927 fails to teach or suggest the present invention as set forth in claim 5, as amended."

Applicant also argues that the invention of Bulgrin teaches "a trace of the actual velocity of the ram superimposed over the velocity profile set in that same figure. Graphs 42, 43, show theoretically what the velocity profiles of the ram would be if the machine actually were to meet the set points established by the control systems. Graphs 42, 43, as admitted by Bulgrin at column 10, lines 35-53, simply show that current control systems cannot meet the set velocity profile curve 40. Therefore, Bulgrin '778 actually teaches away from a disclosure of the superimposition of any of the identified points (A-F) with any particular corresponding points on an actual slide displacement curve."

The Examiner first asserts that since Figure 3 displays an actual slide displacement curve, represented by a solid line, superimposed with a theoretical slide displacement curve, represented by the broken line, the invention of Lose does meet the invention as claimed.

Further, the Examiner asserts that claim 5 only recites, "superimposing the identified start points on the theoretical and actual slide displacement curves; and superimposing the identified end points on the theoretical and actual slide displacement curves so that the theoretical and actual slide displacement curves can be compared to obtain indicators of press performance" and this limitation does not require actual superimposition of the curves themselves. As seen in Figures 3 and 4, Lose does disclose superimposing the start and end points (i.e. slow points) on both the theoretical and actual slide displacement curves and therefore meets the invention as claimed.

The Examiner also asserts that the invention of Bulgrin does not teach away from a disclosure of the superimposition of any of the identified points with any particular corresponding points on an actual slide displacement curve for two reasons. First, a teaching that the actual curve cannot meet the theoretical curve does indicate that there is not desirability to having such a plot because superimposition would still allow a comparison to determine press performance based on how closely the actual curve does reflect the theoretical curve. Second, the invention of Bulgrin does not teach that the actual curve can never meet the theoretical curve but only indicates that this can be the case "depending upon the velocity profile", such as profiles that have very steep rises (column 10, lines 41-53).

Applicant then argues that "the Baserman reference is not analogous art and is not used to solve the same problem as the present invention." The

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Examiner maintains that the Baserman reference and the instant invention are both concerned with performing accurate load calculations and since Baserman et al. teaches a transducer suspension system comprising a rotary actuator that moves an assembly to position the transducer elements on a plurality of sliders (column 3, lines 52-55) wherein the load on the slider is calculated (column 2, lines 60 to column 3, line 11), by determining, and multiplying, values of dynamic deflection of an imaginary axis passing through the center of the slider and of static vertical stiffness (column 5, lines 26-31) to insure balanced conditions (column 5, lines 15-24) and the invention of Lose and Bulgrin does describe the application of bending forces on the press (Lose, column 1, lines 44-53) and balancing the loads imposed across the drive device (Lose, column 14, lines 3-26), the combination would have provided a method for determining the loads on the device to determine if they are balanced at any point in order to aid the operator in insuring correct press operation using a well known relationship between common press parameters (See also U.S. Patent No. Re. 33,783 to Spehrley, Jr. et al., column 2, lines 44-54).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

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U.S. Patent No. 5,130,584 to Faitel teaches a slide with synchronized drive and slip clutch including means for comparing an actual slide displacement to a theoretical slide displacement.

U.S. Patent No. 6,035,775 to Nghiem teaches a pressing device having a control device adapted to control the pressing device in accordance with a severocontrol system of the control device.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

14. Any inquiry concerning this communication or earlier communications

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from the examiner should be directed to Jeffrey R. West whose telephone number is (703)308-1309. The examiner can normally be reached on Monday through Friday, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (703)308-1677. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

jrw
June 1, 2004

